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REMARKS/ARGUMENTS

Claim Rejections Under 35 U.S.C. § 112

Claim 2 is rejected under 35 U.S.C. § 112, paragraph 2, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected to make and/or use the invention. The Examiner requires clarification of the claim language regarding how the recited press platen fits into the method described in claim 1.

Claim 2 has been amended, according the specification page 7, lines 11-18, to recite that the method includes engaging the press platen with said predetermined portion of the continuous strip to preserve the cross-sectional profile during the step of utilizing the curing means.

Claim Rejections Under 35 U.S.C. § 103

B. Claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Seiberling (U.S. Patent Number 4,166,883), or GB 2224031 to Uniroyal taken in view of Mirtain (U.S. Patent Number 4,065,338) and/or Böhm (U.S. Patent No. 4,089,360).

The reference to Seiberling ('883) discloses a green tire provided with an air-sealing liner that is cured or partially cured to allow the tire to be molded in a bladderless tire mold. The reference teaches that the liner can be cured before or after being built into the tire.

The GB reference ('031) teaches a tire having an initially cross-linked inner layer to allow vulcanization of the tire without the use of heating bellows. The initial cross-linking occurs when the rubber mixture is preheated before vulcanization of the remaining tire components. Alternately, the inner layer may be cross-linked by means of electron radiation.

The reference to Mirtain ('338) teaches a raw pneumatic tire carcass having an uncured, elastomeric liner. The uncured liner may include a convex surface on one side of the liner. The convexity serves to prevent excessive reduction in thickness of the liner in the crown region when the tire is inflated from a cylinder to a torus. The flat surface of the liner is adapted to be affixed to the interior of the substantially cylindrical body of the uncured carcass.

The reference to Böhm ('360) teaches an inner liner composite laminate comprising external layers of a soft rubber compound which is desensitized against irradiation cure, an internal layer of a hard rubber which is sensitized to cure when subjected to irradiation, and another internal layer (barrier layer) which resists the passage of air. The internal layers are thicker in a predetermined area of the tire where the innerliner is subjected to the highest pressure in the shaping and curing operations. The laminate, after its construction, is subjected to an irradiation treatment which cross-links the sensitized layers and does not affect the desensitized layers. After the laminate is incorporated into the final product (tire), the remaining layers are cured prior to complete vulcanization.

The Examiner proposes that a combination of the Seiberling ('883) reference with the Mirtain ('338) reference and/or the Böhm ('360) reference provides the claimed invention. Alternately, the Examiner proposes that a combination of the GB ('031) reference with the Mirtain ('388) reference and or the Böhm ('360) reference provides the claimed invention.

The undersigned asserts that the Examiner has not made out a prima facie case of obviousness. Through the decisions of the CCPA and CAFC, certain well-established principles of claim review have been developed. If these principles are not met, a prima facie case of obviousness under 35 U.S.C. § 103 has not been established and the claim at issue should be allowed. Certain of these principles will be briefly discussed in relation to the individual claims rejected by the Examiner's proposed combinations.

Claim 1

THERE MUST BE A BASIS FOR THE COMBINATION: To present a prima facie case of obviousness, where the claims are rejected over a combination of references under 35 U.S.C. 103, there must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself. The Examiner may not pick and choose from various references to arrive at the claimed invention absent some teaching or suggestion in the references themselves.

The '883 reference does not teach or suggest a profiled innerliner formed from a precured portion of a continuous calendared elastomeric strip having a center region with a thickness at least twice the minimum thickness of a lateral region. The disclosed innerliner 6 contemplates a uniform thickness throughout its width. There is no suggestion that the precured innerliner may be modified according to the Examiner's proposal.

The '338 reference teaches an uncured inner liner used to form a tire in a mold having a bladder. The reference does not teach or suggest the use of a precured innerliner. Therefore, there is no motivation for a combination of the references.

THE PRIOR ART MUST HAVE REVEALED A REASONABLE EXPECTATION OF SUCCESS IN MAKING OR CARRYING OUT THE CLAIMED INVENTION BY ONE OF ORDINARY SKILL IN THE ART: The '338 reference is directed toward a method of fabricating a tire in a mold having a bladder. A ribbed inner liner is provided in its uncured state so that air or other undesirably trapped fluid is evacuated from between the bladder and the liner. The evacuation is assisted by the "ironing out" deformation of the ribs and the transformation thereof into a smooth surface corresponding to the smooth surface present by the exterior of the bladder engaged therewith. One having skill in the art would not reasonably expect success by modifying the '883 precured innerliner according to the teachings of the '338 uncured.

THE SUBJECT MATTER OF THE CLAIMS MUST BE VIEWED AS A WHOLE AT THE TIME THE INVENTION WAS MADE: Each claim limitation must be considered and given its proper weight. Claim 1 provides that a predetermined portion of a calendared strip is precured before it is incorporated into the final product. The '360 reference teaches that the laminate is cured after it is incorporated into the final structure. (See Abstract) Therefore, *when viewed as a whole*, the claimed invention cannot be obvious in light of the Examiner's combination.

Since the GB '031 reference is used to also indicate a precured innerliner, its combination with the '338 and/or the '360 references also falls short of making applicant's invention obvious.

THE STANDARD IS “OBVIOUS TO DO” NOT “OBVIOUS TO TRY”: The Examiner asserts that the claimed parameters of the inventive innerliner would be obvious in view of the cited references. However, neither Mirtain ‘338 or Böhm ‘360 give guidance as to the parameters of the thickness variation of the innerliner. There is usually an element of *obviousness to try* in any research endeavor. Patentability based on that as a test would be contrary to statute. (*In re Tomlinson*, 150 USPQ 623).

Claims 2-5

Claims 2-5 each ultimately depend from claim 1. As such, the comments addressed to claim 1 apply equally well to claims 2-5 and are incorporated herein by reference.

In addition, claim 2 provides that a press is utilized to cure the predetermined portion of the continuous strip in a manner so as to preserve the cross-sectional profile formed in the calendaring process.

None of the cited references teach or suggest this inventive step. Seiberling ‘883 suggests electron irradiation or other “usual methods” of curing. However, the disclosed innerliner has a constant thickness. There is no suggestion that a press could be utilized to cure a portion of a continuous strip so as to preserve the claimed cross-sectional profile.

The GB ‘031 reference teaches particular rubber compositions that are partially cross-linked to a gas-impermeable state after pre-heating, for example, at a temperature of 150°C for approximately five minutes or initially cross-linked via electron radiation. There is no teaching or suggestion of press curing an innerliner in order to preserve the claimed predetermined cross-sectional shape.

As discussed above, Mirtain ‘338 provides a profiled uncured liner. There is no teaching or suggestion to use a press to procure a portion of a continuous strip in order to preserve a cross-sectional profile. According to the teachings of this reference, the profile is smoothed out during the cure process. This reference therefore teaches away from preserving the profile as the line is cured.

Böhm ‘360 teaches selective pre-curing of layers of a laminate. The targeted cure occurs upon exposure to irradiation. This reference does not teach or suggest the use of a press with a

profiled platen in order to precure an innerliner while maintaining a predetermined cross-sectional profile.

As to claim 3, none of the cited references teach or suggest winding a predetermined precured portion of the continuous strip having a predetermined cross-sectional profile onto a holding roll before it is wound onto a tire building drum. According to 35 U.S.C. § 103, the invention *as a whole* must be considered.

As to claim 4, none of the cited references show singly or in combination all of the features of claim 4 including providing a splice angle of at least 80°.

As to claim 5, none of the cited references show singly or in combination all of the features of claim 5 including using an adhesive to join the splice surfaces.

Claims 6-7

THE STANDARD IS “OBVIOUS TO DO” NOT “OBVIOUS TO TRY”: The Examiner asserts that the claimed parameters of the inventive innerliner would be obvious in view of the cited references. However, neither Mirtain ‘338 or Böhm ‘360 give guidance as to the parameters of the thickness variation of the innerliner. There is usually an element of *obviousness to try* in any research endeavor. Patentability based on that as a test would be contrary to statute. (*In re Tomlinson*, 150 USPQ 623). In addition, none of the references teach or suggest the claimed splice angle.

Claim 8

Claim 8 is directed to an innerliner formed by the claimed process. The comments directed to claim 1 above apply equally well to claim 8 and are incorporated herein by reference.

Claim 9

Claim 9 is cancelled from the instant application via this Amendment A.

B. Claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Böhm (U.S. Patent No. 4,089,360).

The reference to Böhm ('360) teaches an inner liner composite laminate comprising external layers of a soft rubber compound which is desensitized against irradiation cure, an internal layer of a hard rubber which is sensitized to cure when subjected to irradiation, and another internal layer (barrier layer) which resists the passage of air. The internal layers are thicker in a predetermined area of the tire where the innerliner is subjected to the highest pressure in the shaping and curing operations. The laminate, after its construction, is subjected to an irradiation treatment which cross-links the sensitized layers and does not affect the desensitized layers. After the laminate is incorporated into the final product (tire), the remaining layers are cured prior to complete vulcanization.

Claim 1

THE REFERENCE TEACHES AWAY: A "teaching away" from applicant's invention by a cited reference may be taken into consideration when determining the obviousness of an invention (*In re Deminski*, 250 USPQ 313). This reference does not teach or suggest the instant invention as claimed in claim 1. Rather, it teaches away. According to the teachings of the reference, the laminate 10, after its construction, is subjected to an irradiation treatment which cross-links the layer 12 and does not affect layers 11. The laminate is then placed in the final product and the subsequent processing steps accomplished to yield the final product, including vulcanization thereof which cures layers 11 and does not degrade layer 12. Böhm '360 teaches that a laminate having cured and uncured layers may be completely cured after its assembly into a final product.

THE SUBJECT MATTER OF THE CLAIMS MUST BE VIEWED AS A WHOLE AT THE TIME THE INVENTION WAS MADE: Each claim limitation must be considered and given its proper weight. Claim 1 provides that a predetermined portion of a calendared strip is precured before it is incorporated into the final product. The '360 reference teaches that the laminate is cured after it is incorporated into the final structure. (See Abstract) Therefore, *when viewed as a whole*, the claimed invention cannot be obvious in light of the Examiner's combination.

Also, claim 1 sets forth parameters for the thickness of the cross-sectional profile. The cited reference does not teach or suggest those claim limitations. The reference teaches only that

the thickness of each layer is maintained in the same proportion to the other layers throughout the entire width of the strip.

THE PROPOSED MODIFICATION WOULD DESTROY THE TEACHINGS OF THE REFERENCE: The reference teaches that “it is critical to this invention that some of the layers be selectively sensitized or desensitized to react to irradiation treatment to provide these desired properties.” In other words, the laminate may not be completely cured before its incorporation into a final product (tire). However, claim 1 provides curing the predetermined portion of the continuous strip which becomes the innerliner for the tire. The Examiner’s proposed modification destroys the teachings of the reference and therefore, applicant’s invention is not obvious in light of its teachings.

Claims 2-5

Claims 2-5 each ultimately depend from claim 1. Therefore the above comments directed to claim 1 apply equally well to claims 2-5 and are incorporated herein by reference.

Claims 6-8

Claims 6-8 are each directed toward a precured innerliner. As provided above in the comments directed toward claim 1, the teachings of the reference would be destroyed by providing a precured innerliner for a tire assembly, as set forth in instant claim 6.

Claim 9

Claim 9 is cancelled from the instant application in this Amendment A.

C. Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Loomis (U.S. Patent No. 2,688,996) and/or Gitzinger (U.S. Patent No. 3,027,289) taken in view of Mirtain (U.S. Patent No. 4,065,338) and/or Böhm (U.S. Patent No. 4,089,360).

Claim 9 has been cancelled from the instant application in this Amendment A.

New Claim

Claim 10 has been added to the instant application via this Amendment A. Support for claim 10 is found in the specification at page 7, lines 11-18.

None of the cited references teach or suggest a method for providing a precured innerliner having a predetermined profile that is formed by calendering means and in-lined cured by a press having a pressing surface that mates with the profiled surface.



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CONCLUSION

Applicant believes that this amendment conforms to the newly revised format. Applicant further believes that all requirements for patentability have been met according to 35 U.S.C. §§ 112, 102 and 103. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BROUSE MCDOWELL

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Date

Telephone No.: (330) 535-5711
Fax No.: (330) 253-8601

Roger D. Emerson, Esq.
Reg. No. 33,169
500 First National Tower
106 S. Main Street
Akron, Ohio 44308-1471